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CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. XIX JUNE, 1947 No. 6

FIG. 51. Flowering crest of Arizona Giant furnishes free rent to woodpecker's family. Haselton photo in Desert Botanical Garden, Papago Park, Arizona.

CACTUS AND SUCCULENT JOURNAL

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Vol. XIX JUNE, 1947 No. 6

Germinating *Euphorbia obesa* Seeds ..... Herman Tobusch 82
A New *Peniocereus* From Oaxaca, Mexico ..... Ladislaus Cutak 83
Experiences of a *Euphorbia* Enthusiast ..... Otto Laporte 88
A New Variety From Peru ..... John Akers 91
Adromischus cristatus (Haw.) Lem. ..... J. R. Brown 92
Revisions in the Taxonomy and Some New Combinations in Cactaceae ..... W. Taylor Marshall 94
Mexican Maguey ..... A. A. Georgi 96
Cereusly Speaking ..... John E. C. Rodgers 97
Ladislaus Cutak ..... Scott E. Haselton 98

Germinating Euphorbia obesa Seeds

HERMANN TOBUSCH, Villa Park, Ill.

When using seeds produced on one's own plants, the pods should be allowed to develop slowly in a greenhouse in shade, otherwise many seeds will be sterile. It is easy to tell the sterile apart from the good ones; the latter are always gray with distinctive brown spots and not as smooth looking as the "duds" and they are usually larger, although not always. Seeds should be planted two to three weeks after harvesting. If the temperature is steady at 78 to 85 degrees, they will often germinate in 48 hours. After experimenting with hundreds of *E. obesa* seeds, the rule seems to be that any seeds not up in one week, will hardly ever come up. This will apply to all Euphorbia seeds as well. Those from the year before take a little longer and the percentage of germination is lower. Take an ordinary waterglass, fill it half full or more with cotton, wet the cotton thoroughly; place the seeds on top and put another piece of cotton over them, and press down softly. Very little water in the bottom of the glass will keep the cotton wet. If temperatures are as mentioned and the seeds are good, they will germinate 80 to 100 per cent. Place all seeds on the cotton with point (hilum) down so that the root develops straight downward; this facilitates pulling them out of the cotton without breaking when planting. As the seeds germinate, plant them about an inch apart in pots. A glasshouse is not needed; I keep mine in my office where I can watch them.

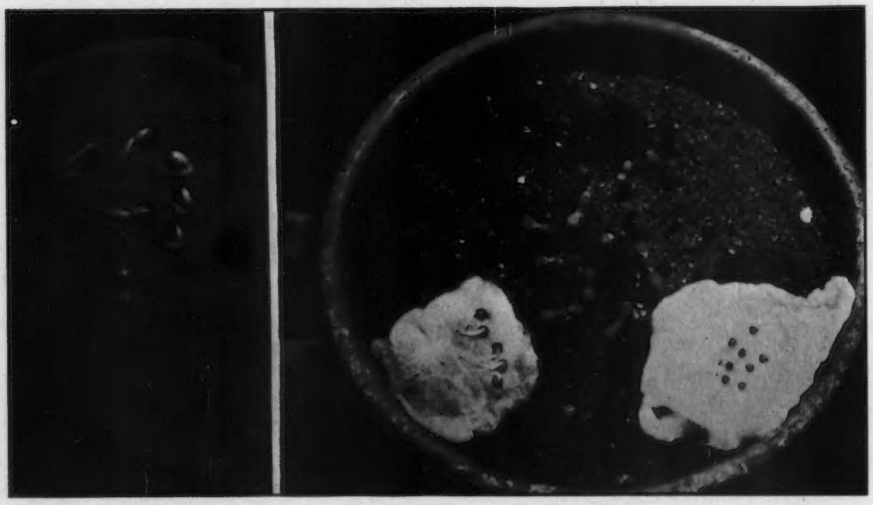

FIG. 52. (Left) Good and poor seeds with some germinating. (Right) As seeds germinate they are planted in pots.

FIG. 53. Spineless and spiny joints of *Peniocereus Macdougallii* n. sp. showing flowers after anthesis.

A New Peniocereus From Oaxaca, Mexico

By LADISLAUS CUTAK

Missouri Botanical Garden

When Britton and Rose erected *Peniocereus* as a genus in the Cactaceae in 1909 only one species was known to exist, it being *P. Greggii,* a widely distributed, yet not abundant, cactus in Southwestern United States and northern Mexico. Thirteen years later when these same cactologists were publishing their monumental work on the Cactus Family, a second species came to their attention, *P. Johnstonii,* originating on San Josef Island off the east coast of southern Baja California. In 1926 Ortega discovered a third member, *P. Rosei,* in Sinaloa, an attractive species with mottled or marbled stems. Then in 1946 a fourth member turned up in Guerrero, *P. Fosterianus,* which I had the pleasure of describing. Once again a new entity is proposed,

FIG. 54. *Peniocereus Macdougallii* n. sp. in native habitat on Cerro Arenal, Isthmus of Tehuantepec. Tom Macdougall sits directly beneath the plant.

this time from the State of Oaxaca.

Our story takes us back to the year 1940. Mr. Thomas MacDougall, a New York nurseryman, was making his eleventh visit to the Isthmus of Tehuantepec in that year. With his faithful guides he had just climbed Cerro Arenal—a rugged ridge overlooking Tequisistlan and the broad valley west of the picturesque town of Tehuantepec in Oaxaca. The little party was out to collect reptiles, and incidentally a new species of the curious shovel-nosed frog was found. The group made its way down by Caobano (sometimes spelled Covano) on the Rio Tejas. The stream was followed for some distance and then in soil on an immense rock a single large plant of a scraggly cactus was detected. The following season, another route to Cerro Arenal was taken, this time walking from Escurano Creek, and again the cactus was seen, but it was a much smaller specimen. A jaunt to a nearby gorge revealed a few more scattered individuals. One specimen was photographed and about a year ago a print of it fell into my hands. A cursory examination gave a hint that the cactus might be related to *Peniocereus,* but beyond that it was unlike any species known in that group. Naturally, my interest in the plant was greatly aroused and when an opportunity arose to visit the Isthmus earlier in the year I had in mind to see and study this plant in its native habitat. It was my good fortune to see it flower in February thereby strengthening my conviction that it was an undescribed species. It is my pleasure to name it *Peniocereus Macdougallii,* dedicating it to Thomas MacDougall, who for many years has been an enthusiastic student and collector of plants in the Isthmian region of Mexico.

Our party, consisting of Tom MacDougall, three young Chontal Indians, and myself, left Tehuantepec at eight o'clock on the morning of February 24, 1947, headed westward into the mountainous country that lay ahead. After riding on a bus for one-half hour, we got off and plunged into a thorn thicket bordering the left side of the Pan-American Highway. By one o'clock in the afternoon we had reached Escurano Creek and partook of a frugal meal. The march was becoming quite laborious as we were ascending to higher ground and the sun was hot. During the early part of the trip, small clumps of *Opuntia decumbens* and an unidentified Pedilanthus were prominent in the vegetation along the trail. Our first night camp was established beside a waterhole, called "Aguaje Guayabo" by our boys. Our second day's march

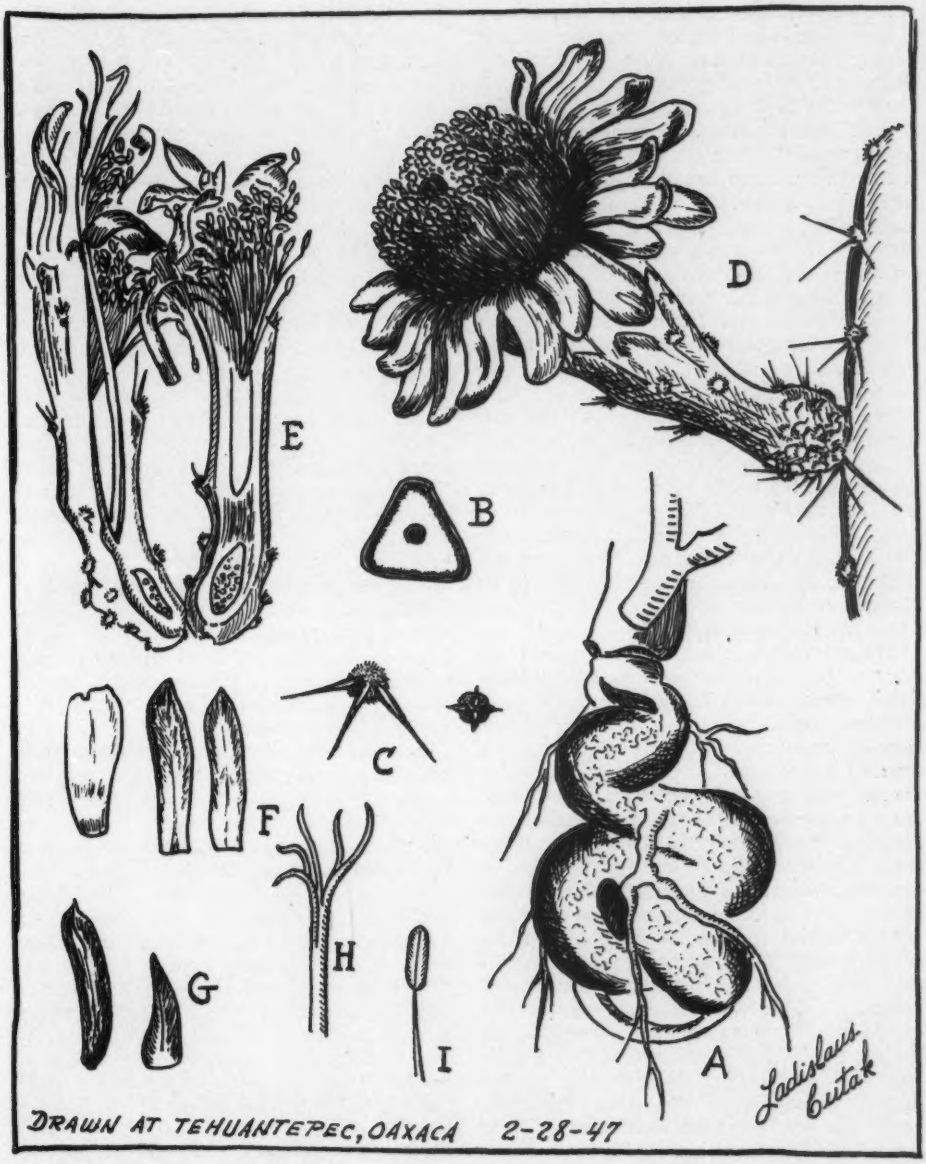

FIG. 55

PENIOCEREUS MACDOUGALLII Cutak. A—tuberous root when grown in cramped space; B—cross section through stem; C—spine areoles on armed and unarmed joints; D—open flower; E—wilting flower cut open to show the ovarian chamber and attachment of stamens; F—inner perianth segments; G—outer perianth segments; H—part of style and stigma cluster; I—upper part of stamen to show anther shape. Drawn approximately to scale, except figure A.

was equally tiresome, at least to me, for the continuous ascents and descents had me panting, puffing, sweating and sliding continuously. Oftentimes the head guide had to cut a path through the thicket of low shrubs to permit us to pass. Later in the afternoon we made our night camp beside a small trickle of water near the summit of Cerro Arenal. Early on the third morning we worked our way to the commanding ridges above our camp, where magnificent distant views of the terrain could be observed. A portion of the Pan-American Highway could be seen as it wound its way through a mountain pass towards Oaxaca. There were also views of the Tehuantepec and Tequisistlan rivers and the valleys through which they flowed. A sharp descent into a side gorge brought us in contact with the new cactus. Scattered individuals were growing on the steep slope in limited numbers. At no time or any other place in the Arenal region were the plants plentiful, and as far as we know the known habitat and the number of plants within it, remains small. Growing in an uninhabited section of the Isthmian region in a thicket of deciduous shrubs and limited in its distribution, it can readily be seen why this cactus has escaped detection.

The new cactus, at best, can be described as a scraggly shrub up to ten feet high with medium-sized, greenish-white, night-blooming flowers. Cultivated plants, no doubt, will make a more pleasing appearance. Curious about the root system I dug and pulled up one specimen which revealed that it did not possess a huge turnip-shaped tuber so characteristic in the other species, but instead elongated fleshy roots, somewhat flattened in appearance, three inches in diameter. Because of limited numbers of this cactus, I was loathe to pull up more specimens for examination to determine whether any others might produce heavy tubers such as possessed by *P. Greggii,* but I'm quite certain that they do not exist in this new cactus. However, this difference should not exclude our new entity from the genus. In the light of present day knowledge of *Peniocereus* it is my contention that the original description of this once monotypic genus will need some modification in order to include the latest members which were placed therein during the past quarter century.

The following detailed description is made from plants growing in their native habitat. Young shoots taken from adult stems cannot be told apart from those of *P. Rosei* or *P. Fosterianus,* so close they mimic each other but there is no difficulty distinguishing mature stems. For the Latin diagnosis I am greatly indebted to Dr. Leon Croizat of Caracas, Venezuela.

Peniocereus Macdougallii Cutak, n. sp.: Plants shrub-like, 8 to 10 feet high (24-30 dm), with elongated, branching, triangular stems arising from a short or long, cylindrical trunk. Roots on old plants very long, tuberous, often flattish, brown, 3 inches (7.5 cm.) thick. Primary and secondary stems cylindric, brown, 2½ inches (6.5 cm.) in diameter. Fertile branches always 3-angled, the ribs somewhat undulate, dark green, often tinged purple, some appearing spineless, others conspicuously spiny, up to 4½ feet (13.5 dm.) long. Juvenile growth at tips usually quadrangular or triangular (rarely 5- or 6-angled). Areoles conspicuous, roundish to roughly triangular, at first filled with whitish to brown wool, later practically naked, 1 to 4 cm. apart. Spines inconspicuous on some branches, on others very prominent, usually 3 or 4 from the lower end of the areole, grey with darker tip. Short, conic spines, less than 1.5 mm. long, appear on the 'spineless' joints while longer, acicular ones, up to ¾ inch long (2 cm.) are prominent on the thorny stems. Flowers nocturnal, one to an areole and as high as 10 or more appearing on a single stem, lightly scented, akin to pineapple, greenish-white, 3½ inches (8.5-9 cm.) long, 5.5 cm. broad, when fully expanded. Inner perianth segments linear to oblong, acute, white in the lower half, light greenish in the upper, about 14-16 in number, 1 inch (2.5 cm.) long and 5 mm. wide. Outer perianth segments like the inner, about equal in number, greenish on face, darker green on the outside and more or less tinged purple red, especially at base, 14-21 mm. long and 4 mm. broad. Stamens erect, 24-32 mm. long, white, attached all along the interior of the throat. Anthers linear, 2 mm. long, 1 mm. broad, basifixed. Style white, 6.3-7 cm. long, about 2 mm. thick. Stigma lobes erect, cream colored, 5 to 8 in number. Flower tube slender, greenish, often suffused with purple, with prominent areoles on knobby projections bearing brownish wool and several (usually 5 or 6) whitish to reddish bristlelike spines, 1.5-3.5 mm. long. Ovary tuberculate, dark green, 1.5-2 cm. long, 1.2 cm. wide, with crowded, conspicuous, rounded, brown-woolly areoles. Fruit not seen.

Type locality: Thickets of deciduous shrubs and small trees on steep slope of an unnamed gorge on Cerro Arenal overlooking valley drained by Rio Tequisistlan and Rio Tehuantepec in Oaxaca, Mexico. As far as I know this is the only gorge on Cerro Arenal that overlooks Rio Tequisistlan.

Distribution: limited to slopes of Cerro Are-

FIG. 56. Victor, the Chontal Indian guide, pointing to gorge where the new *Peniocereus* was discovered.

nal, between altitudes 1800-2600 ft. above sea level. Type specimen deposited in the Herbarium, Missouri Botanical Garden, on sheet No. 1303930, from plant collected in native habitat. Living material is being cultivated in St. Louis and will be distributed to growers when available.

Peniocereus Macdougallii Cutak, sp. nov.: Fruticosa, 24-30 dm. alta, ramis elongatis, ramosis, triangularibus a caudice longitudine ludente cylindrico ortis. Radicibus in speciminibus adultioribus perlongis, tuberosis, interdum complanatis, brunneis, 7.5 cm. crassis. Caudice primario secundarioque cylindrico, brunneo, 6.5 cm. crasso. Ramis fertilibus semper trigonis, costis repandulis, obscure viridibus interdum purpureo colore soffusis, aliis primo intuito inermibus, aliis bene aculeatis, ad 13.5 dm. longis. Innovationibus apicalibus pro more 4- vel 3-angularibus. Areolis proeminentibus, rotundatis ad grosse triangularibus, primo albido vel brunneo tomento notatis, demum calvis, 1-4 cm. distantibus. Aculeis in ramis aliis inconspicuis, in aliis valde proeminentibus, pro more 3-4 ex areolae parte infima, griseis apice obscurioribus. Floribus nocturnis, vix fragrantibus, albido-viridibus, 8.5- 9 cm. longis, 5.5 cm. latis. Perinathii laciniis intimis linearibus oblongisve, acutis, deorsum albidis, sursum pallide viridibus, pro more 14-16, 2.5 cm. longis, 5 mm. latis. Perianthii laciniis externis lanceolatis linaribusve, dorso obscure viridibus, facie interna viridibus, extus purpurascentibus, 14-21 mm. longis, 4 mm. latis. Staminibus erectis, 24-32 mm. longis, albis, fauce insertis. Antheris linearibus 2 mm. longis, basifixis. Stylo albo, 6.3- 7 cm. longo, 2 mm. crasso. Stigmatis lobis erectis, pallide luteis, 5-8. Tubo gracili, viridi-purpurascenti, areolis proeminentibus in podariis insidentibus, tomento brunneo praeditis, aculeisque albidis rubidisque subsetaceis armatis, 1.5-3.5 mm. longis. Ovario tuberculato, atro-viridi, areolis confertis, rotundatis, conspicuis, brunneo-lanosis. Fructu ignoto.

ALOES OF BIBLICAL TIMES

From "Some Flowering Plants of the Bible" by Harold N. Moldenke in Wild Flower Magazine, July, 1946.

Aloë succotrina. "And brought a mixture of myrrh and aloes" (John 10:39). The "aloes" of the Old Testament were probably either *Aquilaria agallocha* or *Santalum album* (not discussed here, since they are arborescent species), but those brought by Nicodemus to embalm the body of Jesus were doubtless the true aloes, *Aloe succotrina.* The inspissated juice of this plant forms the purgative drug of this name, a drug well known to the ancients and used by the Egyptians for embalming. Its smell is not very agreeable and its taste very bitter. It is now used mostly as a horse medicine. The plant is a succulent, with tubular red flowers, tipped with green, borne in a dense spike. The drug is made principally from the pulp of the fleshy leaves.

JULY JOURNAL

If your July JOURNAL is later than usual it will be because your Editor is attending the Convention in Cincinnati. We can promise you another 24-page issue, so we hope that you will be lenient with us. S. E. H.

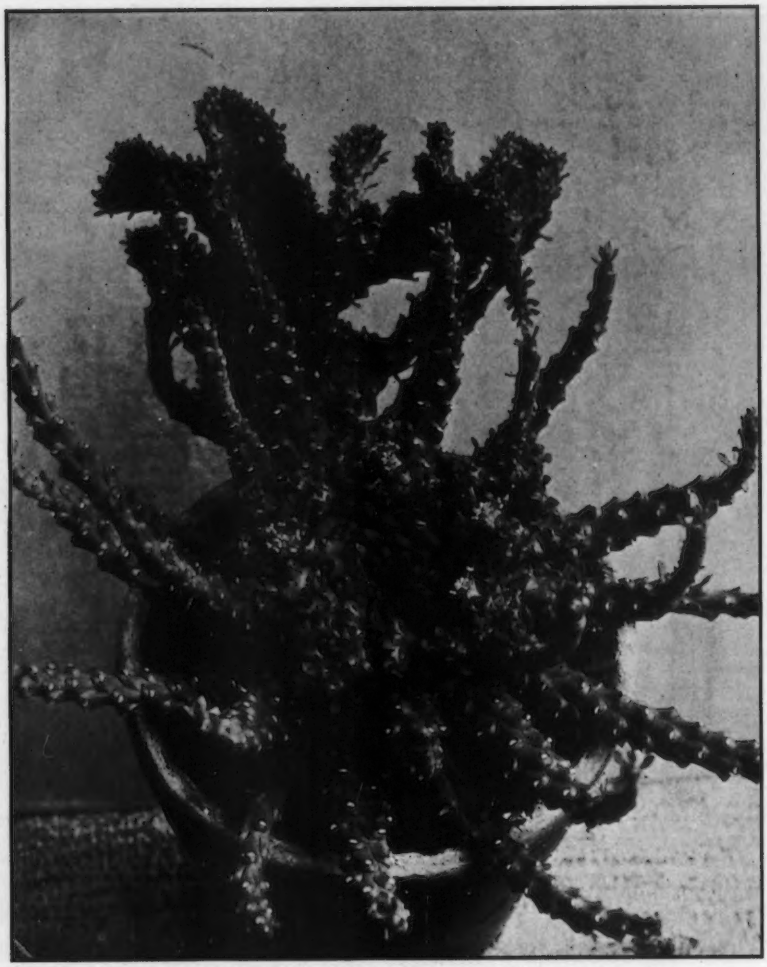

FIG. 57. Normal and crested form of *Euphorbia pugniformis* sometimes confused with *E. inermis*. Photo by A. J. A. Uitewaal, Amsterdam.

Experiences of a Euphorbia Enthusiast

By OTTO LAPORTE

Although I had been growing Euphorbias for a long time my interest in these plants was greatly increased after the fascinating work by White, Dyer & Sloane, "The Succulent Euphorbieae" appeared a few years ago. Not only does the amateur become acquainted with numerous new plants but the habitat pictures show how most Euphorbias look as they grow naturally. There is no doubt that many plants which one purchases or receives as gifts do not at all exhibit the natural manner of growth since they are generally cuttings. The following remarks are concerned with my attempts to grow plants in the greenhouse which approximate the natural form. For this purpose I will divide the genus into four groups albeit this division vastly oversimplifies matters:

1. Spineless Euphorbias.
2. Tree-like Euphorbias with spine pairs.
3. Shrubby Euphorbias with spine pairs.
4. Euphorbias with peduncular spines.

1. *Spineless Euphorbias.* Many of these will

grow satisfactorily from cuttings and exhibit the familiar caespitose growth, such as *E. globosa, tridentata* and *ornithopus*. However, the Medusa group—*E. caput-medusae, E. caput-medusae* var. *Commelini, E. Bergeri* and *E. inermis*, behave differently.

When I purchased my first *E. inermis* many years ago, I was assured that the single stem would "soon" branch and "assume" the characteristic form, that is to say, grow a head. However, the branch became three feet long, growing and flowering vigorously every year without branching at all. I have had similar experiences with branch cuttings of the other species named.

The generally recommended procedure for starting head growth is to lop off the tip of the branch or even to cut the branch down to the ground. The plant is supposed to throw out a side shoot which will then behave like a head. I have found this procedure only partially successful. It works best with *E. Bergeri* while with other plants the side growth, if it appears at all, behaves like the growing tip of another branch. Up to the present I have found a completely satisfactory method to produce head growth only in *E. inermis* which I should like to describe in more detail.

A well rooted branch cutting of this plant will be found to possess tuberous roots. Cut the tuber off the plant leaving the lower roots attached to the tuber. Plant it very close to the soil surface. When the tuber begins to sprout new growth above the soil level every sprout will presently assume a clavate shape and start sending out tiny arms. These new head sprouts can be removed and rooted. New head sprouts will continue to make their appearance on the same tuber. In this way I have been able to get as many as twenty perfectly formed "head plants" of *E. inermis* from one tuber in one season.

2. *Tree-like Euphorbias with spine pairs.* The growth of this familiar group of Euphorbias may rather aptly be compared to that of pines, spruces and similar conifers. A well-grown plant is supposed to possess a leader shoot from which every year one, sometimes several, whorls of branches are formed. The most familiar representatives of this group are *E. lactea, antiquorum, Cooperi* and *grandidens*.

For these plants it is comparatively easy to bring about the correct form of growth; the method to be used is completely analagous to that which is employed for the propagation of *Araucaria excelsa*, the Norfolk Island Pine, a familiar house plant of the previous generation. If you have been given a cutting of any of these Euphorbias, you should cut off the growing point and dormant side buds will throw off leader shoots above the ground level which themselves may be re-rooted. This method invariably works with *E. Cooperi* and *tetragona* of which I have produced well formed plants. If, however, a rooted cutting of a side shoot is permitted continued growth, a weak-stemmed plant and an only sparsely branched one will result which has no similarity to the tree-like plants occurring in nature.

It is sometimes difficult to judge whether or not a shoot is indeed a leader shoot. For some plants a leader possesses more angles and shows therefore a rounder cross-section than do the side branches. Berger, in his book on Euphorbias, called such plants heterogonal in contrast to isogonal plants for which both main stem and branches have the same number of angles. *E. triangularis, tetragona* and *grandidens* are such heterogonal plants. On the other hand I have seen perfectly well-formed plants of *E. lactea*, the central stem of which was only three-angled and could therefore not be characterized as a leader on account of its own structure.

Lastly there are plants which seem to begin their regular crown structure so high above ground that most eastern amateurs will never be lucky enough to witness its development. I have a *E. ammak* which is to date a single unbranched five-foot column. Also the book "Succulents for the Amateur" shows, on page 141, a *E. abyssinica* of considerable height without a single branch. Perhaps all such plants are really raised from branch cuttings.

3. *Shrubby Euphorbias with spine pairs.* To this group belong such beautiful plants as *E. grandicornis, coerulescens* and *stellata*. The descriptions in the Euphorbia book say in each case that the plants possess an underground stem which hardly protrudes above the soil level. From this there are supposed to emerge the main branches which for some plants, but by no means for all, may themselves have secondary branchlets. This kind of growth is clearly the same as that of a Forsythia or any other shrub of which the growth renews itself from the ground up and outwards instead of from a central stem above ground.

While I have seen well-formed plants of *E. stellata* or *squarrosa* I wish to emphasize the fact that none of the private or public collections of the eastern United States or Europe which I have inspected, can boast a plant of *E. coerulescens* or *grandicornis* possessing an underground stem. All of these plants seem to

be rooted branch cuttings. Evidently a Euphorbia of this group, in contrast to a Forsythia, does not assume the correct plant form by itself. I have not been successful in causing the production of such a stem by vegetative means such as pruning or layering. I should very much appreciate if any of the Euphorbia growers reading this know of a way to produce, by vegetative means, plants of this kind which will sprout from the ground.

4. *Euphorbias with peduncular spines.* This particular section of Euphorbias containing such interesting plants as *E. horrida, polygona* and *mammillaris* is my favorite type because all the plants in it are dioecious, that is to say, male and female flowers do not occur on the same plant. Thus, to have a complete collection, it should be the Euphorbia grower's ambition to possess two plants of each species which will then constitute his "breeding pair." And the ease with which they set seed is indeed one of their main attractions.

The Euphorbia book shows that most of the plants of this group should be profusely branched. This is indeed the case with *E. submammillaris* and *E. pulvinata;* most plants of *E. mammilaris* and *cereiformis* which I have seen are very poorly branched. While *E. pulvinata* assumes the proper caespitose form of growth, however small a cutting you start with, no amount of pruning will induce similar branching in *E. mammillaris* which according to figure 645 in White, Dyer and Sloane should have a branch structure identical with the former plant. Perhaps the increased vigor which comes with outdoor planting will produce increased branching when the plant is grown in the southwest.

5. *A few remarks on propagation by seed.* Where vegetative means of producing the correct plant form fail, growing plants from seed will invariably produce plants of better shape. The disadvantages of this method are twofold: many plants fail to set seed because the male and female cyathia do not mature at the same time. Secondly, the slowness of the method: many a grower might be discouraged if he had to wait twenty years to get a nicely shaped plant.

As far as my own experiences go, I have successfully grown *E. coerulescens* from seed and have been able to raise numerous small plants whose central stem is only on inch high and from whose top the familiar "unbranched" branches emerge. I feel sure that these plants will in time assume the required Forsythia-like shape. Furthermore, three year old seedlings of *E. stellata* are doing well and have developed the typical carrot-like root.

Among the Euphorbias with peduncular spines I have raised a large batch of hybrids of *E. submammillaris* (pollen parent) with *E. cereiformis* as well as *E. mammillaris,* as seed parents. Both seed parents are notoriously poor branchers. It was a source of extreme satisfaction to me that all seedling plants, of which some are now more than eight inches high, are abundantly branched; some of them with a short, almost subterranean, central stem, others with a central stem-like leader.

Since male plants of *E. cereiformis* and *E. mammillaris* seem to be very rare, I have not yet been able to grow pure non-hybrids of these species. I venture that such seedling plants would also be much more abundantly branched than their poorly branched parents which have been propagated vegetatively in greenhouses for generations.

In closing I wish to acknowledge gratefully the gift, in 1941, of seeds of *E. horrida,* from Mr. G. A. Frick, the well known Euphorbia authority. Today I have two profusely branched and vigorously spined plants about five inches in diameter. Let us hope they will be of opposite sex!

GERMAN SUCCULENT SOCIETY

Mr. Curt Backeberg reports that their Society is reorganizing with Mr. Vogts, Director of Adult Education, as President. Mr. H. Jacobsen of Kiel will be the Secretary, and Curt Backeberg the Editor. Instead of resuming their magazine while there is a shortage of paper this next year they plan to produce new books; the first will be "Americas Cacti" by Curt Backeberg and will be followed by one on African succulents. Scott Haselton will serve on the Honorary Committee.

From Heinrich Schick, former president of the Freiburg (Germany) Cactus Society, we learn of the death in December, 1945, of Dr. Curt Dinter at his residence in Neukirch, Germany. This was quite a blow to succulent fans throughout the world. Dr. Dinter being a prominent authority on Mesembryanthemum in particular. Also Alfred Loesch died in November, 1946, in Kirchzarten. In addition to being an authority of ferns, Mr. Loesch was prominent in importing and describing many new Conophytums. *Conophytum Loeschianum* Tisch. bears his name.

FROM LOS ANGELES TIMES

TUCSON (Ariz.) Nov. 9. (Exclusive) — Not enough cactus! That's one of the main things wrong with the diet, and consequently the health, of the Papago Indians.

The conclusion was arrived at after a Federal investigation of eating habits among Papagos, Negroes and Mexicans, analyzed by Dr. Ethel M. Thompson, professor of nutrition at the University of Arizona.

Before the white man came, the Papagos were among the healthiest of all peoples. They lived on wild game, seeds of desert plants, what little corn they could grow, saguaro fruit, green buds of choya cacti and tender young shoots of prickly pears. Now they buy most of their food at the grocery store. Many of them have bad teeth and suffer from other ailments.

CACTUS AND SUCCULENT SOCIETY OF AMERICA, INC.

Cincinnati, Ohio

June 26-28, 1947

AFFILIATED SOCIETIES

Association Francaise des Amateurs de Cactus et Plantes Grasses, France.
Arizona Cactus and Native Flora Society, Phoenix, Arizona.
Cactus and Other Succulent League of Oakland, Oakland, California.
Long Beach Cactus Club, Long Beach, California.
Epiphyllum Society of America, Los Angeles, California.
Los Angeles Cactus and Succulent Society, Los Angeles, California.
Eagle Rock Cactus Club, Los Angeles, California.
Southern California Cactus Exchange, Los Angeles, California.
Denver Cactus and Succulent Society, Denver, Colorado.
Jefferson Garden and Cactus Club, Jefferson, Iowa.
Des Moines Cactus and Succulent Society, Des Moines, Iowa.
Cactus and Succulent Club of Chicago, Chicago, Illinois.
Beverly Hills Cactus Club of Illinois, Chicago, Illinois.
Freeport Cactus Club, Freeport, Illinois.
Henry Shaw Cactus Society, St. Louis, Missouri.
Heart of America Cactus and Succulent Club, Kansas City, Missouri.
Detroit Cactus and Succulent Society, Detroit, Michigan.
Midwest Cactus and Succulent Society, Lorain, Ohio.
K.I.O. Cactus Club, Cincinnati, Ohio.
Amateur Cactus Society of Chester, Chester, Illinois.
Oklahoma Cactus and Succulent Society, Oklahoma City, Oklahoma.
Philadelphia Cactus and Succulent Society, Philadelphia, Pennsylvania.
El Paso Rock and Cactus Club, El Paso, Texas.
Washington Cactus and Succulent Society, Seattle, Washington.
The Cactus and Succulent Society of Milwaukee, Wisconsin.

COMMERCIAL NURSERYMEN'S DISPLAY

A display of specimen, rare and interesting plants. Open to the general public without cost. Exhibited by California Cactus Growers Association, Inc. Staged by Howard E. Gates, Corona, Calif. At the close of the Convention, the plants exhibited will be presented to the Irwin M. Krohn Conservatory for public use. Material shown was grown by:

Apex Plant Co., Baldwin Park, Calif.
Ory Baker, Escondido, Calif.
Cactus Pete, Los Angeles, Calif.*
C. C. Curtis, La Canada, Calif.
Edmund R. Devlin, Baldwin Park, Calif.
Gates Cactus Gardens, Corona, Calif.
A. W. Guy, El Monte, Calif.*
Hagenburger's Specimen Plant Gardens, West Los Angeles, Calif.
Fred H. Halstead, Baldwin Park, Calif.
A. C. Johnson, Azusa, Calif.
Johnson Cactus Gardens, Hynes, Calif.*
Gordon L. Leslie, Monrovia, Calif.
Los Angeles Plant Co., Manhattan Beach, Calif.
Manhattan Miniature Gardens, Manhattan Beach, Calif.*
J. R. McCreight, Azusa, Calif.
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(*) Indicates growers who solicit retail business.

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CACTUS AND SUCCULENT SOCIETY OF AMERICA, INC.

Second Biennial Convention

Schedule of Events

THURSDAY, JUNE 26

9:00 to 12:00 A.M.—Registration of Delegates and Members, Balcony, Sinton Hotel.

12:30 P.M.—Luncheon, Art Museum, Eden Park*

2:00 P.M.—Alms Auditorium, Art Museum, Eden Park. Organization Meeting.
Address of Welcome, Irvin Krohn, Board of Park Commissioners.
Appointment of Secretary.
Reports of Committees and appointments to Commtitees.
Review of History of the Society, W. Taylor Marshall.

8:00 P.M.—Convention Hall, Sinton Hotel.
Illustrated talk, *Guatemala and Its Cacti*. Dr. Elzada U. Clover.
Growing Cacti in Northern Canada, Laval Goulet.
The Cactus and Succulent Conservatory in St. Paul, John Haag.

FRIDAY, JUNE 27

10:00 A.M.—Convention Hall, Sinton Hotel.
The Cactus Journal, Scott Haselton.
Spine Chats, Ladislaus Cutak.
Cereusly Speaking, John E. C. Rodgers.

12:30 P.M.—Luncheon, Sinton Hotel*
The American Horticultural Society, B. Y. Morrison.

2:00 P.M.—Convention Hall, Sinton Hotel.
The Desert Botanical Garden, W. Taylor Marshall, Director.
Followed by general round table discussion.

No evening activities scheduled, Our Hosts will suggest points of interest to suit all tastes.

SATURDAY, JUNE 28

10:00 A.M.—Krohn Conservatory, Eden Park.
Cactus Show by members. Commercial showing by California Cactus Growers Association and other dealers.

1:00 P.M.—Picnic Lunch, Eden Park*

3:00 P.M.—Closing Session of Convention, Hotel Sinton.
Reports of Committees, resolutions and selection of place of next convention.

7:00 P.M.—Banquet, Sinton Hotel*

PHOTOGRAPHIC SALON, Lobby, Sinton Hotel. All three days.

COMMERCIAL EXHIBITS BY

J. C. RUTENSCHROER, Cincinnati, Ohio.
FERNANDO SCHMOLL, Cadereyta de Montes, Queretaro, Mexico.
CALIFORNIA CACTUS GROWERS ASSOCIATION

(Tickets covering events marked (*) can be secured at time of registration for $7.00.)

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JOHN HAAG, St. Paul, Minnesota

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SOME POINTS OF INTEREST NEAR CINCINNATI

Compiled by L. Combs—Suggested by G. A. Gray

For the convention-bound cactophiles who are interested in visiting some of the outstanding scenic and historical spots in the Kentucky-Indiana-Ohio area, and who have time to spend a few extra days on their convention trip, some suggestions are herewith offered. The variety and number of items listed may be a surprise to those who have not previously thought of vacationing in the Middle West.

If you come from the west on US-50 past the coal and oil fields of Illinois and into the limestone region of Indiana, you may see a pioneer village, including an old mill which still grinds corn, at Spring Mill State Park, near Mitchell. In this park, as well as in Muscatatuck State Park about fifty miles distant, and in many other places in southern Indiana, are large areas of hardwood forests. Clifty Falls State Park, near Madison, reached on Indiana-7 from US-50, contains a scenic gorge and falls.

Farther to the north, on US-40, at Richmond, Indiana, is the establishment where Hill's roses are grown—one of the world's largest rose plantings. South of Richmond, on US-27, lies Liberty, Indiana, where J. N. Rose, co-author of "The Cactaceae," spent his early life.

If you are coming south on US-25 to Cincinnati, a visit to the Ohio Caverns or Zane Caverns—or both—is in order. While these caves are small, they contain some very beautiful rock formations. They are near West Liberty, Ohio.

The Blue Hole, near Castalia, on US-6, is another interesting sight in northwestern Ohio. It is a spring which puts forth 7,000,000 gallons of water daily.

If you approach Cincinnati from the east on US-22 or US-50, the Hocking State Parks are not far off your route, on US-33 near Logan, Ohio. These parks—six in number—bear descriptive names as follows: Cantwell Cliffs, Rock House, Old Man's Cave, Conkle's Hollow, Cedar Falls, and Ash Cave. Together they comprise a really outstanding group of deep valleys, overhanging ledges, colored rock formations, and beautiful wooded areas.

Not far away, on US-23 between US-22 and US-50 is the Giant Logan Elm, near Circleville, Ohio. Beneath this tree the great Indian chief, Logan, delivered a speech to a British envoy in 1774.

Just off US-50, at Chillicothe, you may see Ohio's only national monument, the Mound City Group National Monument, an excellent example of the work done by Ohio's Mound Builders of pre-Columbian days.

By leaving US-50 at Bainbridge and travelling on Ohio-41 and Ohio-73 you arrive at Ohio's most famous archaelogoical remains, the Serpent Mound, also fashioned by the Mound Builders.

Coming from the east on US-52, you may care to stop at the Roosevelt Game Reserve, a beautiful wooded section near Portsmouth, Ohio, or at General Grant's birthplace, in Point Pleasant, Ohio.

Some very spectacular scenery may be found at Kentucky's famous Natural Bridge State Park, reached from US-60 on Kentucky-15, near Slade, Kentucky. This is a large natural bridge from the top of which wonderful views of the surrounding Appalachian Plateau country may be obtained.

As you come directly north to Cincinnati on US-25, you pass through the famed Blue-Grass Region near Lexington, Kentucky. This section, so attractive to the Kentucky pioneers, is still a beautiful land of live-stock farms and tobacco fields.

West of Lexington, on US-68, some rugged scenery may be found along the Kentucky River. The section near Brooklyn Bridge is especially attractive. The Pioneer Memorial at Harrodsburg—a rebuilt pioneer stockade—is in this area. Shakertown, an interesting settlement of Shakers, a religious sect, is found here.

However, the "biggest" piece of scenery in the whole area covered in this listing is reserved for the travellers who come north on US-31E from Nashville to Louisville. This is Mammoth Cave, located in Mammoth Cave National Park, the only national park in the Middle West. A trip through the cave is an unforgettable experience. Just as at Carlsbad Caverns, an all-day trip is provided, with National Park Service guides, and lunches are served in the Snowball Dining Room, deep under the clay hills of Kentucky. Whether you prefer Carlsbad or Mammoth is a matter of opinion, but certainly no one interested in underground scenery should miss this cave. It is probably just as well, however, to miss the numerous other caves in the vicinity, which are privately owned and very competitively advertised, unless, of course, you have plenty of time and wish to see more of the same kind of scenery. One privately owned cave is famous in Kentucky cave lore as the place of the death of Floyd Collins.

Going north on US-31E, you arrive at the Lincoln Memorial at Hodgenville, Kentucky. This is maintained as a national historical park. Lincoln's birthplace—the original log cabin moved and reconstructed—is located here in an attractive setting.

Also on US-31E, at Bardstown, is My Old Kentucky Home State Park, a fine old mansion where Stephen Foster wrote the famous song.

In Louisville, home of the Kentucky Derby, stop at the restaurant of our fellow member L. E. Johnson, "The Blue Boar," on Fourth Street.

Near Louisville, on US-31W are Fort Knox and the government's gold repository (which you will not enter even though you are curious).

From the list just presented it can be plainly seen that there are many places of interest within a radius of 150 miles of Cincinnati. If you look over the assortment of caves, archaeological remains, pioneer settlements, woodlands, rugged valleys, etc., surely you will find something to suit your fancy.

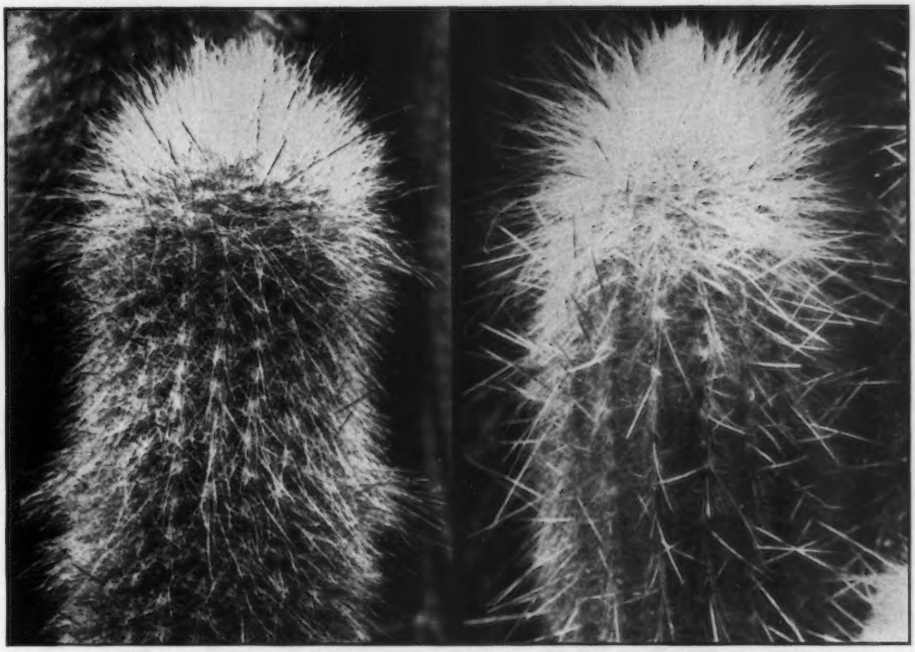

FIG. 58. (Left) *Peruvocereus setosus* with the occasional darker central spine. (Right) *P. setosus* var. *longicoma*

A New Variety From Peru

By JOHN AKERS

Peruvocereus setosus var. *longicoma* n. var.

Plants caespitose and rather dwarf, reaching a height of only 30 cm.; ribs low, 16 in number; stems about 4.5 cm. thick but appearing to be 10 cm. in diameter due to the dense covering of spines and hairs; spine cushions approximate (7 to 8 mm. distant), gray, felted, oval (6 mm. long, 4.5 mm. broad and 2 mm. high); felt consists of short, kinky white and yellow hairs (under magnification); areoles filled with both acicular, pungent spines and long, bristly hairs; spines about 20, 1 cm. long, yellow to gray, mottled and longitudinally straited; 1 or 2 central spines, heavy, acciular and up to 3.5 cm. long; central spine reddish brown when young, but rapidly turning to silver; bristles 50 or more, emanating from the lower half of the areole, fragile, brittle, hair-like and up to 4.5 cm. long; growth of hairs concentrated at the top of the stems giving the plants a senile appearance; epidermis sage green; flowers unknown and fruit unknown; new growth of hairs often tinged with pink, but the general aspect of the plant is silver-white; roots heavy, long, woody and scaly.

Type locality: Caracoles Hills south of Lima.

This beautiful plant is quite distinct and is the most attractive of all the varieties of *Peruvocereus setosus*. The quality of the long bristly hairs is nearly the same as that of young *Cephalocereus senilis* or *C. Hoppenstedtii* seedlings but the coloration is silver-gray instead of white. Although this cactus is quite distinct from the other varieties of *P. setosus*, there are enough fundamental similarities to classify it as a variety of *P. setosus* until flowers or fruits dictate otherwise. This new variety is a very rare plant and only a few specimens have been found. It should be a very highly prized plant and when grafted could probably surpass the Oreocerei for beauty.

Peruvocereus setosus var. *longicoma* var. nov.

Planta exigua caespitosa circa 30 cm. alta; rami circa 4.5 cm. diametro costis depressis 16; areolae ovales 6 mm. longae 4.5 mm. latae 2 mm. altae spinis et setis obtectentes; spinae circa 20 flavae vel cinerae muculatae striataeque, 1-2 spinis centralibus 2-3.5 cm. longis rubescentibus demum argenteis; setis circa 50 fragilibus angustis usque ad 4.5 cm. longis ad apices ramulorum confertis; flores et fructus ignoti.

FIG. 59. *Adromischus cristatus,* showing aerial roots. nat. size.

Adromischus cristatus (Haw.) Lem.

By J. R. BROWN

This handsome dwarf succulent is widely known in collections of succulent plants. The plant is shortly stemmed with the leaves somewhat clustered towards the apex of the stems. With age the base of the stem enlarges and from this base other stems may arise, the older stems also bearing short branches.

The aërial roots on the stems of this Adromischus are of great interest, at first of a reddish-brown color, becoming duller with age and forming a dense shaggy growth. It is thought this growth of aërial roots may have absorptive powers and assist the plant in obtaining some of its moisture. A photograph of an old stem, showing this remarkable hair-like growth, is shown in its natural size.

The somewhat flabellate leaves are softly pubescent and abruptly narrowed in the lower part into a long petiole-like part. The leaf size varies according to the degree of shade in which the plants are grown, from 1.5-3.5 cm. long, 10-20 mm. broad, and 5-10 mm. thick; the longer, narrower, and thinner leaves being produced under more shaded conditions. This plant likes considerable sunshine, and when this is possible the upper thickened part of the leaf is about as broad as it is long. The upper leaf margins are undulate somewhat resembling, on a smaller scale, the upper leaf margins of *Cotyledon undulata.*

A photograph, taken in late summer, of two young plants of this Adromischus growing in the sun, is also presented to show the flowering habit. It is a floriferous little plant, flowering equally as well whether growing outdoors or under glass. It is also of fairly easy culture, this probably being the main reason for its wide representation in collections of succulents.

Adromischus cristatus is one of the long known little succulents, being first named *Cotyledon cristata* by Haworth in 1827.

FIG. 60. *Adromischus cristatus* (Haw.) Lem. x 0.7

REVISIONS IN THE TAXONOMY AND SOME NEW COMBINATIONS IN CACTACEAE

By W. TAYLOR MARSHALL

Part III

Chilenia Bckbg. and *Chileniopsis* Bckbg. have both been abandoned by their author as has *Bridgesia* so these names go into the synonymy of *Neoporteria* as should *Neochilenia* Bckbg. based on *Echinocactus Jussieui* Monv. as any separation of this species from *Neoporteria* would be again splitting hairs.

The genus *Weingartia* Werd. supplanted *Spegazzinia* Bckbg. because the latter was a preoccupied name. *Echinofossulocactus* (Lawr. 1841) B. & R. must be kept as the generic name in place of *Stenocactus* (Sch.) Berger, which was in common usage in Europe and was used by me in Cactaceae, for reasons well expounded by Croizat in the Journal XIV:69. 1942.

Soehrensia Bckbg. was based on *Lobivia Bruchii* B. & R., a species not too well known to them but which fits well into the genus *Eriosyce* to which Backeberg first assigned it.

Horridocactus Bckbg., based on *Cactus horridus* Colla, and *Friesia* Fric are more hair splitting and both should be retained in *Pyrrhocactus* if, indeed, this genus is to be retained and not returned to *Neoporteria.*

Eriocactus Bckbg. is based on *Echinocactus Schumannianus* Nic., and *Brazilocactus* Bckbg. on *Echinocactus Graessneri* Sch. Both are well known as species of *Notocactus. Eriocactus* was published (B.f.K. 6:1938) as *Eriocephala* and the separation was based on the larger, loose flowers and yellow pistil. Why and when it was changed to *Eriocactus* is not known to me and certainly the characters given as justifying a separation from *Notocactus* are insignificant.

Austrocactus B. & R. was returned to *Malacocarpus* sensu B. & R. (*Notocactus* as here used) by Hosseus in "Notas Sobre Cactaceas Argentinas" 1:72. 1939.

Islaya Bckbg. based on *Echinocactus islayensis* Förster, differs so little from species of *Parodia* that Borg and most other botanists unite it with that genus and we follow their conclusions.

Echinomastus B. & R. includes plants with ribs formed by confluent tubercles grooved to the axil and the flowers arise from these grooves as in *Thelocactus,* for which reason the genus was placed in the *Coryphanthanae* in my classification in "Cactaceae." At that time I noted the probability that the two genera should be united and all further evidence since then has confirmed my opinion.

Likewise in "Cactaceae" I transferred *Echinocactus uncinatus* Galeotti from the genus *Ferocactus,* where Britton and Rose placed it, to *Thelocactus* because in this species the ribs are also formed of confluent tubercles and the flowers arise from a groove on the upper side of these tubercles. Glands are also present in the groove as in other species of *Thelocactus* and *Coryphantha,* and, based on this factor, Backeberg has erected the genus *Glandulicactus* for *Echinocactus uncinatus.* I feel that convenience is best served by leaving the species in *Thelocactus.*

Numerous suggestions that *Escobaria* and *Neobesseya* could be united to *Coryphantha* have been expressed and there is no good reason to prevent such a union, as both *Escobaria* and *Neobesseya* are founded on very uncertain characters. *Escobaria* was separated from *Coryphantha* because of the red fruits of the species of *Escobaria,* while those of *Coryphantha* are said to be green. This is not true in all cases as Escobarias frequently have greenish or pink fruits while several species of *Coryphantha* have pink to red fruits. In *Escobaria* the tubercles at the base of the plant loose their spines and become corky, but this is also true of many species of *Coryphantha,* notably *C. recurvata, C. Muehlenpfordtii, C. Nickelsae* and others.

Neobesseya is based principally on the globose red fruits and the long tubercles which sometimes produce branches from the grooves. *Coryphantha macromeris, C. Runyonii, C. Nickelsae* and others also proliferate from the tubercle-grooves and the answer to the red fruit argument is as given for *Escobaria.*

We therefore propose to unite *Escobaria, Neobesseya* and Backeberg's *Lepidocoryphantha,* based on *Coryphantha macromeris,* with the genus *Coryphantha.*

Likewise the genera *Dolichothele, Phellosperma* and *Bartschella,* which I referred to *Mammillaria,* in "Cactaceae," along with *Porfiria* Böd. and *Krainzia* Bckbg. must be returned to *Mammillaria,* as none of them are founded on distinct characters. The reasons for combining the first three were given in "Cactaceae." *Porfiria* founded on the protruding ovary of the one species, *P. Schwartzii,* is surely not justified, and *Krainzia* was founded on *Mammillaria longiflora* whose flowers vary but little from those of many other Mammillarias.

The treatment of these genera by recent writers shows clearly the indeterminate factors involved. Craig in "The Mammillaria Handbook," 1945, rejects the genus *Phellosperma* which was based on seed structure but retained *Bartschella* which is also founded on seed structure. Craig also retained *Dolichothele* as a valid genus based on the long tubercles "not consistently arranged in regular series of spiral rows," a factor not mentioned in the original generic description, and included only in the entities of Britton and Rose. Another writer meanwhile added to the genus several species of *Mammillaria* including *M. camptotricha,* which would certainly be justified by the original generic description.

Epiphyllopsis (Berger) Bckbg. was a subgenus in Berger's classification, which Backeberg has raised to generic rank to house *Epiphyllum Russellianum* v. *Gaertneri* Regel, leaving *Cereus Russellianus* Gardner as the only species in the genus *Schlumbergera.* Here again we find the tendency to split genera to an uncalled for degree. The genus *Epiphyllopsis* should be disregarded and the two species included in *Schlumbergera.*

Since the rediscovery of *Epiphyllum Ackermannii* Haworth in the wilds by Charles Louis Gilley, Sr., as reported in Journal XVI:94. 1944, which resolved the doubts as to the validity of the species, it has been placed in the genus *Ackermannia* by certain of the German botanists, but as the tube of the flower is not longer than the limb and the diurnal flower is colored it belongs in the genus *Nopalxochia* B. & R., as does also *Lobeira MacDougallii* Alex. for the same reason. No good purpose is accomplished by the retention of either the genus *Ackermannii* or the genus *Lobeira* since the species assigned to those genera can be included in *Nopalxochia.*

We therefore propose two new combination:

Nopalxochia Ackermannii (Lindley) Knuth-Backeberg

Epiphyllum Ackermannii Haworth, Phil. Mag. 6:109. 1829

Nopalxochia MacDougallii (Alexander) Mar.

Lobeira MacDougallii Alexander, Cact. Journ. XVI:175. 1944

Bonifazia Stand. & Steyerm., Studies in Central American Plants IV., Field Mus. Nat. Hist. XXIII:66. 1944, was erected on a newly found species named *Bonifazia quezalteca* which is similar to the Wittias in its small flower with a tube much longer than the limb but differs from the known species of that genus in that the narrow perianth is abruptly recurved from the base as in the flowers of *Chiapasia.* This is due to the pendant position of the stems from which the flowers arise, the bend permitting the apices of the flowers to point upward. Doubtless, if the stems were trained erect the bend in the perianth would not occur. Therefore this new species could be contained in the genus *Wittia.*

Pseudozygocactus Bckbg. was erected for the species *Rhipsalis epiphylloides* Campos-Porto & Werdermann, which differs from typical *Rhipsalis* in that the stems are formed by short, flattened joints resembling *Zygocactus.* In a genus of such varied forms as Rhipsalis shows, there seems to be but little reason for a separation.

MIDWEST CULTURE

All books advocate the use of sand in our potting soil to make it more porous but the authors forget that the sand in the Great Southwest is alkaline while our sand is acid—and acidity is death to cacti. There are several types of sand here in Illinois and I have analyzed all types and find them decidedly acid. When I use sand I counteract its acidity by the use of crushed limerock, plaster, mortar or charcoal. Our sand is mostly sterile and while cacti will form roots readily they will soon starve in pure sand or even a mixture of one-half sand; I know as I have lost some fine plants and every plant I lose is a challenge to me, just like waving a red rag in front of a bull. I have conducted various experiments for fifteen years and have some conclusive results.

For *Ferocactus* I use the following soil mixture and I have over a dozen varieties, all are healthy, full of good color, new growth each year, and blooms on many of them. Of course one should use an inch or two of broken pottery in the bottom of the pot for drainage, the amount depending on the size of the plant. For soil I use a good garden loam with a garden trowel full of crushed charcoal, some fine, some large lumps, another trowel full of crushed limerock, another of broken and crushed mortar and old plaster. This will give the soil plenty of lime and with the larger pieces keep the soil porous. I also use either decomposed granite or some crushed soft red brick, try it and you will be surprised. This mixture is now porous, rich in lime. Notice so far I have used NO SAND. The roots are placed in this mixture and the body of the plant sets on the same mixture with some sand added to facilitate drainage in wet weather so the body will not rot during a too wet spell. Most of the Ferocacti grow in limestone soil in the various localities throughout the southwest and require a lime soil.

Don't use manure of any sort as manure holds moisture and also induces bacterial infection which will rot the roots. It is safe and very beneficial to use a weak solution of manure water (only cow manure) a couple times a year. I use it with wonderful results. I also use or stir a little potash into the top soil once a year. This makes for more and better flowers and better spines. Manure, old well-rotted cow manure can be used safely and with good results on Epiphyllums and succulents. Some collectors "shy" away when you mention Vigoro but it contains all necessary minerals or elements and a couple times in the summer time I stir a small amount into the top soil of each pot.

PROF. ARTHUR BLOCHER, Amboy, Illinois.

FIG. 61. (Left) Mescal factory in Mexico. (Right) The Pulque-producing Maguey.

Mexican Maguey

By A. A. GEORGI

The century plant has a versatile cousin in Mexico called the "Maguey." Webster tells us this word is from the Spanish, probably of Taino origin. There are four plant types of Maguey, depending on the kind of soil in which they grow.

In the rocky, dry soil of Yucatan, for instance, the Maguey variety is "Hennequen." Hamrocks, nets, cables, shopping bags, rope, burlap sacks, and purses, are a few of the many articles made from the fibrous Hennequen Maguey. Botanically defined, the Maguey is any fiber-yielding plant of the genus *Furcraea,* which is closely related to *Agave.* Further, it is "any of the fleshy-leaved Mexican Agaves, especially one yielding pulque."

In the moist soil of the Valley of Mexico, which formerly was a lake and therefore still contains an extremely high water content, the Maguey is the source of pulque, the most popular drink of the Mexican Indians. Some of them consume up to twenty liters (one liter is a little less than a quart) of this wildly alcoholic beverage every day.

Pulque is consumed in great quantities in the Mexican capital, where, according to the federal annual report for 1943-1944, there were 982 pulquerias (drinking places). "Pulque curado" is made with an admixture of pineapple or some other fruit juice. It is also commonly used as a leavener in bread instead of yeast, and bread made with pulque will last two weeks or more without moulding. The states of Hidalgo, Tlascala and Mexico are the chief pulque-producers.

To the south of Mexico in the state of Oaxaca, "mezcal" is produced from the Maguey. Mezcal is a distillate of the plant's leaves, in counter-distinction to pulque, which is a fermentation of the juice extracted from the plant's heart.

A Mexico City street-car carries the following advertisement: "Palenque—the true mezcal made in clay pots from Oaxaca. Drink it with powdered worms of the Maguey plant." These worms, powdered, or eaten dried like peanuts, "live, grow and have their being" in the Maguey plant, and are therefore the cleanest meat one can eat. Truly, there is nothing more delicious than a worm "taco," made by folding savory Maguey worms, onions and avocados into a corn tortilla.

To the west of Mexico, in the states of Jalisco and Michoacan, where the soil is moderately moist, "tequila" is the derivative of the Maguey. Next to vodka, tequila is the strongest alcoholic drink known. It, too, is a distillate of the plant's leaves, and is Mexico's national drink.

Boiled with sugar, a Maguey cactus candy is made; soaked in vinegar and spices, Maguey cactus pickles are produced; while the dried fiber properly twisted and fashioned makes one of the finest lassos or "reatas" in the world. A very versatile plant indeed is the Maguey!

June 1. *Rebutia minuscula* decided to put out four new heads. Buds are a dream this year. Usually a "sure fire bloomer." Likes water with a short rest in December or January here abouts. Soil rich on the sandy side with free drainage.

June 3. *Nyctocereus serpentinus* bloomed high up on two six-foot stems. Blooms are always beautiful but I prefer the Selenicerei for actual "fragile" beauty. *Cereus peruvianus* cutting, 8 inches in diameter and 3 feet tall, is growing; took two years to root.

June 4. *Selenicereus spinulosus* bloomed. No S. E. Texan has ever seen it wild. Must have been when the Rio Grande made a wider loop into Mexico than usual. Br. and R. says eastern Mexico to S. E. Texas. My plant has never become cumbersome; stems 3 feet long. Stays in small pot with its aerial roots growing back into soil for support.

June 6. Aloes growing. Get too much of the cactus treatment to be that lush green all winter that I see in small collections. Mine bloom even though leggy. Sacrifice lower leaves for space by limiting watering. Stapelias beginning to get their stride. Buds appearing on *S. grandifolia.* Echinopses have few buds; when kept too hot and dry they do not bud for me. Like plenty of air circulating about them and not too much direct sunlight in my glasshouse. Water plenty when buds appear. Prefer natural fertilizers; I use two-year old chicken manure top dressing.

June 8. Watered all of the plants by filling the pots up to the top of the rim. Do this three times a week during hotter weather. Surface watering poor substitute for plenty. If I had time I'd set my plants in pan of water until surface was wet, then drain; would do this at least once a week until September.

June 9. *Epiphyllum Hookeri* in bloom. This year it was fed with pulverized chicken manure. The white flower measured 10½ inches long and 10½ inches across.

June 11. *Selenicereus Macdonaldiae* bloomed. A Queen in her own right. Blooms yearly at this time. It's in a heavy rich soil of clayey top soil, sand and humus. Used a top dressing of kiln-dried cow manure or old chicken manure (I use which ever I have at the time). *Aloe brevifolia* bloomed; red on single stalk. Top of *Oreocereus Trollii* has new growth. *Pilocereus Strausii* has resumed growth; growth stops if kept too wet and hot.

June 12. Top dressed Epiphyllums, Rhipsalis, larger columnar cacti, and Echinopsis with pulverized chicken manure and sand—half and half. More buds mature per plant. Next year I'm thinking of—saves potting, too.

June 14. *Huernia Penzigii* bloomed. First of the genus to bloom this year. Give plenty of water in small pots and water freely when budded.

June 15. Bud on main stem of *Lobivia Hertrichiana.* Bloom on cluster of *L. Williamsii;* first clustered *Lobivia* I've had. Painted benches "verdes green;" makes nice background for terra cotta pots and richly colored succulents.

June 17. *Selenicereus Macdonaldiae* opened at 9:30 p.m. Plants under grape arbor soaking wet. Perhaps the soaking rain of yesterday is what they needed; I'm often too stingy with water.

June 18. *Wilcoxia senilis* seedlings up. Planted June 1. They have large pointed cotyledons of reddish green. "Epiphyllum Handbook" came. More books of specialized groups and their cultural needs is what we collectors need; the notes on diseases and soils are worth the price of the book. Fig. 104 shows Deutsche Kaiserin with caption, "foliage is usually marred with spots which cannot seem to be eradicated;" made me less optimistic in my attempts to get rid of them. The blooms more than offset the spots, so I keep it.

June 19. *Echinopsis* (crested plant) bloomed—lavender pink. Low-growing with buds on previous year's growth. In my clayey loam, sand and humus soil. Medium spines. Has outstripped "contest plant" in glazed pot. But it could be a faster growing hybrid. I still like glazed pots with drainage holes.

June 20. *Opuntia compressa,* our hardy cactus of Ohio and northern U.S.A., bloomed—sulphur yellow without the disfiguring brown-orange at base of petals which is common in the other four or five sub-species of *O. compressa. Gymnocalycium Damsii* buds are ¾ of an inch long. *Aeonium Lindleyii* bloomed with its 7-pointed dark yellow flowers. *Heliocereus speciosus* bloomed—blood red outside with brilliant iridescent purple inner cup; exotic. Plant blooms best for me in partial shade. "Pill bugs" seem partial to buds when small.

June 23. Double seed pod on *Stapelia grandiflora* opened. Seed scattered same as its American cousin, the milkweed. Two more to open. Easily grown from seed; needs moisture and strong light to germinate.

June 24. *Gymnocalycium hohenbenderianum* bloomed. Light pink to white and of medium size. Nothing spectacular about any of this genus. No collection is complete without Gymnos. "Gymno" means naked and "calycium" means bud. No spines or hair on the tube. Too small for corsage material.

June 25. Seventeen flowers open on *Opuntia compressa;* 3½ inches is the largest. Watered the greenhouse inmates with "Blackleaf-40" water—1 teaspoon to 1 quart of water; controls mealies and also discourages ants that "plant" them in favorable locations. A small amount of soap should be added if used as a spray. *Pseudorhipsalis macrantha* budded.

June 29. Temperature high 80°, low 64°; humidity at 8 a.m. was around 85°. *Rhipsalis cassytha* in bloom since April 28. In same pot of soil. Gets extra water, shade and fresh air. Plant has 2-foot stems hanging over small pot. Gets plenty of fertilizer, too. White berries suggest mistletoe.

June 30. Fourteen days of sunshine this month. Thirty-seven cacti and forty succulents have bloomed since January 1; during that time there have been 66 days of sunshine. Greenhouse is shaded after 2:30 p.m. Put up muslin shades over *Selenicereus* and *Hylocereus*—no whitewash this year. This ends June and five and a half years of "Cereusly Speaking"—the diary of a Cactophile.

CORRECTION

The Agave-like plant shown on the cover of the October, 1946, JOURNAL is *Furcraea longaeva* and not an *Agave* or a *Fouquiera.* Thanks to E. J. Alexander.

WINDSHIELD STICKERS

As requested by the members in attendance at the first biennial convention, the Society has purchased an appropriate, three-colored emblem to be displayed on a member's car—either on the windshield or windows. The new decals can be obtained at 25c each or 5 for $1.00 from Carl Brassfield, 8060 Lankershim Blvd., N. Hollywood, California. These Stickers will make splendid Christmas gifts for your friends.

BOOK NOTES

COLOR PLATES—Set of 50, 2x2¾ in., of South African Succulents. Similar to those used in Van Laren's *Succulents*. These cards are beautifully colored. Price $1.10 postpaid.

AMERICAN ORCHID CULTURE — White, 1946. Third edition, thoroughly revised and enlarged. An important work on the history and culture of orchids, from a purely American point of view, for the use of American growers, both commercial and amateur. Featured is a list of American orchid hybrids—unobtainable elsewhere in such complete form. Vivid and informative accounts are given of the several orchid collecting trips undertaken by the author over a period of years—to Costa Rica and the Canal Zone, to the Hawaiian Islands, to the Philippines and to the Far East—forming another special feature of this volume. 14 excellent four- and five-color plates. Price $5.10 postpaid.

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FIG. 62. Mr. and Mrs. Ladislaus Cutak and their three boys: Dicky, Laddie, and Ronnie. (Illustration courtesy of one of Lad's many friends, Mr. Fitzpatrick.)

LADISLAUS CUTAK

By SCOTT E. HASELTON

Because of the popularity of one of our members of the Cactus and Succulent Society of America we are replacing *Spine Chats* with notes about its author. We have observed with interest the progress of this man since 1927 and we prophesy greater attainments in the next twenty years. His many friends wish him continued success on this his 20th anniversary of activities with the Missouri Botanical Garden.

On May 4, 1927, at the age of 19, Lad Cutak began working at the Missouri Botanical Garden, doing ordinary garden chores such as spading flower beds, picking up leaves, potting, planting and weeding. For three years he took a rather passive interest in his work waiting for an opportunity to present itself in some other profession, but then when the depression came along and he was contemplating marriage, he suddenly realized that he would like to follow in his father's footsteps and become a horticulturist. By

diligent application he soon showed ability in his work and was placed in charge of the main Conservatory housing exotic plants. The Cactus and Succulen House intrigued him more than any other room in the Garden and he spent many hours rebuilding and augmenting the collection. It seems he did a pretty good job of it, too, for shortly after he was made a permanent member of the staff—one of the youngest to hold a position at the world famous institution.

In the past 15 years he had done much toward the popularizing of cacti and the other succulents, contributing more than 125 lengthy articles to various outstanding horticultural magazines, collaborating with other authors on scientific books, and delivering illustrated lectures before garden clubs, civic, religious and social societies throughout the country. His articles must be very popular with editors for more than half of all that he had authored has been reprinted in other magazines. When he attempts to describe a fascinating plant or a plant hunt he does it in a style which reflects boundless enthusiasm and energy. One of his many admirers states that he has the knack of making serious material extremely readable. As to talks, he is probably the most popular lecturer on the Garden staff, for in the past few years he has been in great demand, both locally and out of town.

Since his first trip into the desert in 1935 he has done extensive exploring for plants in this country and in Mexico, searching for seeds and living materials to enhance the collections at the Missouri Botanical Garden. More than 30,000 miles have been covered in his wanderings, including two trips to Florida, two to the Big Bend country in Texas, one to southern California, one to Colorado, the great Southwest and many others. He has botanized in 16 of the 28 states in Mexico, often in out of the way places hardly touched by the botanist. Only recently he returned from a 7-week sojourn in the Isthmus of Tehuantepec which was replete with thrills.

Frequently he is called upon to act as judge in flower shows, particularly when house plants are featured. Serves on various committees and fulfills all his commitments with care and punctuality. At present he is on the board of directors of the St. Louis Horticultural Society and guided the destinies of the club for one year as president. He organized the Henry Shaw Cactus Society in 1942, and served the first 2½ years as president and was elected to the presidency again in 1947. At the same time he is editor of the monthly club paper, the "Cactus Digest" which is enjoying popularity among cactus friends all over the country.

Cutak does not care to become too scientific but rather tries to make science more interesting to the layman by popularizing its many phases. When necessity demands he can become technical as is evidenced in some of his masterful theses published on the Cactaceae, etc. Three new species of cactus have been described by him and from time to time others will be described when research is completed. *Coryphantha ramillosa* was described in 1942, *Peniocereus Fosterianus* in 1946 and *Peniocereus Macdougallii* in this issue of the JOURNAL.

Apparently cacti and succulents will always remain Cutak's chief pets, for from the very beginning they intrigued him by their bizarre growth and masculine beauty. However, he is not satisfied to be called a cactus expert but a lover and student of various other exotic flora, particularly if it is found on desert and jungle. That is why he has taken avid interest in bromeliads, aroids, aquatics and ornamental trees and shrubs. His travels have brought a deeper appreciation of plants that grow in association with cacti and succulents.

Some of the important articles he has written include the following:

"Culture of Succulents in the Midwest" in Missouri Botanical Bulletin, Sept., 1935.
"Ethiopian Euphorbias" in Desert Plant Life, December, 1935.
"Practical Culture of Succulents" in Gardeners' Chronicle of America, April. 1937.
"Hardy Succulents for the Rock Garden" in Missouri Botanical Garden Bulletin, Nov., 1937.
"Aloe Vera as Remedy for Burns" in Missouri Garden Bulletin, December, 1937.
"Guide to the Succulent Plant Collection of the Missouri Botanical Garden" in Missouri Botanical Garden Bulletin, May and June, 1938.
"The Misunderstood Kalanchoids" in Gardeners' Chronicle of America, February, 1939.
"Haworthias, the Dainty Succulents" in Missouri Botanical Garden Bulletin, May, 1939.
"Along the Cactus Trail" in Gardeners' Chronicle of America, July, 1939.
"Desert Trails and Jungle Paths in Old Mexico" in Missouri Botanical Garden Bulletin, September, 1939.
"Desert Terrariums" in Gardeners' Chronicle of America, October, 1939.
"Beyond the Beaten Path" in Journal Cactus and Succulent Society of America, April, 1940.
"A Cactus Hunt in Mexico" in Gardeners' Chronicle of America, August, 1940.
"Cacti in the Outdoor Garden" in Real Gardening, February, 1941.
"Cactus Gardening Indoors" in Lawn and Garden Handbook No. 1, 1941.
"A Trip to the Land of Swaying Palms" in Missouri Botanical Garden Bulletin, October, 1941.
"History of the Succulent Plant Collection at the Missouri Botanical Garden" in Missouri Botanical Garden Bulletin, June, 1941.
"Florida Adventure" in Journal, Cactus and Succulent Society of America, December, 1941.
"Turk's Caps are Found in America" in Missouri Botanical Garden Bulletin, May, 1942.
"Two New Desert Shrubs for Midwest Gardens" in Missouri Botanical Garden Bulletin, June, 1943.
"The Life-Saving Barrel Cactus—Myth or Fact?" in Missouri Botanical Garden Bulletin, October, 1943.
"Desert Plants in Winter Houses" in The Home Garden, December, 1943.
"The Christmas Cactus and its Culture" in Missouri Botanical Garden Bulletin, Dec., 1943.
"How to Graft Cacti" in Flower Grower, May, 1944.
"A Trip to the Florida Tropics" in Missouri Botanical Garden Bulletin, May, 1944.
"Insects that attack Cacti and Succulents" in Missouri Botanical Garden Bulletin, November, 1944.
"The Night Blooming Cereus and its Allies" in Missouri Botanical Garden Bulletin, May, 1945.
"Bromeliads are Fascinating Plants" in Missouri Botanical Garden Bulletin, Sept., 1945.
"Is There Palatable Water in the Barrel Cactus?" in Missouri Botanical Garden Bulletin, September, 1946.
"Succulents for the Bridal Party" in Home Gardening, October, 1946.
"Along the Highways and Byways in Southern California" in Missouri Botanical Garden Bulletin, April, 1947.

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